

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicants:	Ming C. Hao, et al.	Examiner:	Jin Cheng Wang
Serial No.:	10/774,315	Group Art Unit:	2628
Filed:	February 6, 2004	Docket No.:	200314065-1
Title:	Methods and Systems for Automated Visual Comparison Based on User Drilldown Sequences		

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**APPEAL BRIEF UNDER 37 C.F.R. § 41.37**

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Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

This Appeal Brief is filed in response to the Final Office Action mailed December 20, 2006 and Notice of Appeal filed March 20, 2007.

**AUTHORIZATION TO DEBIT ACCOUNT**

It is believed that no extensions of time or fees are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 C.F.R. § 1.136(a), and any fees required (including fees for net addition of claims) are hereby authorized to be charged to Hewlett-Packard Development Company's deposit account no. 08-2025.

### **I. REAL PARTY IN INTEREST**

The real party in interest is Hewlett-Packard Development Company, L.P. a limited partnership established under the laws of the State of Texas and having a principal place of business at 20555 S.H. 249 Houston, TX 77070, U.S.A. (hereinafter "HPDC"). HPDC is a Texas limited partnership and is a wholly-owned affiliate of Hewlett-Packard Company, a Delaware Corporation, headquartered in Palo Alto, CA. The general or managing partner of HPDC is HPQ Holdings, LLC.

### **II. RELATED APPEALS AND INTERFERENCES**

There are no known related appeals or interferences known to appellant, the appellant's legal representative, or assignee that will directly affect or be directly affected by or have a bearing on the Appeal Board's decision in the pending appeal.

### **III. STATUS OF CLAIMS**

Claims 1 – 20 stand finally rejected. The rejection of claims 1 – 20 is appealed.

### **IV. STATUS OF AMENDMENTS**

No amendments were made after receipt of the Final Office Action. All amendments have been entered.

### **V. SUMMARY OF CLAIMED SUBJECT MATTER**

The following provides a concise explanation of the subject matter defined in each of the claims involved in the appeal, referring to the specification by page and line number and to the drawings by reference characters, as required by 37 C.F.R. § 41.37(c)(1)(v). Each element of the claims is identified by a corresponding reference to the specification and drawings where applicable. Note that the citation to passages in the specification and drawings for each claim element does not imply that the limitations from the specification and drawings should be read into the corresponding claim element or that these are the sole sources in the specification supporting the claim features.

The specification at paragraph [003] provides the following summary: In one embodiment, a method for presenting data comprises receiving the data; and deriving a

multi-level dynamic hierarchical structure for the data based on drilldown sequences input from a user, wherein the drilldown sequences automatically compute a graphical visual comparison of the data and comprise: deriving a multi-pixel bar chart to display an aggregated data paradigm; and deriving a graphical illustration to display a data distribution paradigm.

Claim 1 is directed to a method for presenting data. The method comprises receiving the data (Fig. 9, #100; paragraph [0039]) and deriving a multi-level dynamic hierarchical structure for the data based on drilldown sequences input from a user, wherein the drilldown sequences automatically compute a graphical visual comparison of the data (Fig. 9, #110; paragraphs [0040 – 0042]). Deriving the multi-level dynamic hierarchical structure comprises deriving a multi-pixel bar chart that simultaneously displays numerical values of aggregated data for plural bars (Figs 3 and 5; paragraphs [0028 – 0033]) and deriving a graphical illustration that displays a comparison of the numerical values of aggregated data (Fig. 6; paragraphs [0034 – 0035]).

Claim 10 is directed to a computer-readable medium having computer-readable program code embodied therein for causing a computer system to perform a method of arranging data (paragraph 0052)). The method comprising determining a set of attributes for placement of the data in a pixel bar chart having plural bars that each include a plurality of pixels with each pixel encoded with a portion of the data (Fig. 9, #100; paragraphs [0026], [0039], [0048 – 0051]). The method also comprises drilling down from the pixel bar chart to derive (1) another pixel bar chart that displays numerical values of aggregated data for each of plural bars and (2) a graph that displays a comparison of the numerical values of aggregated data (Figs 3 and 5-6; paragraphs [0019], [0028 – 0035]).

Claim 11 is directed to constructing a multi-level hierarchical tree having a plurality of different levels to graphically illustrate at least a portion of the data (Fig. 1; paragraphs [0015 – 0018]).

Claim 16 is directed to a computer system, comprising a bus, a display device coupled to the bus, a computer-readable memory coupled to the bus; and a processor coupled to the bus to execute code (paragraphs [0015], [0017], [0020], [0051 – 0052]). The processor executes the code for receiving data (Fig. 9, #100; paragraph [0039]) and

deriving a multi-level dynamic hierarchical structure for the data based on preferences input from a user(Fig. 9, #110: paragraphs {0040 – 0042}). The processor also executes the code for navigating through the multi-level dynamic hierarchical structure using drilldown sequences input from the user, the drilldown sequences automatically computing (1) a pixel bar chart showing numerical values of aggregated data for each of plural bars and (2) a graph showing comparisons between the numerical values of aggregated data(Figs 3 and 5-6; paragraphs [0019], [0028 – 0035]).

**VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

Claims 1-3, 6-18, and 20 are rejected under 35 USC § 102(b) as being anticipated by “Hierarchical Pixel Bar Charts” (Keim-2002).

Claims 2, 4-5 and 19 are rejected under 35 USC § 103(a) as being unpatentable over “Hierarchical Pixel Bar Charts” (Keim-2002) in view of USPN 5,893,090 (Friedman).

## VII. ARGUMENT

The rejection of claims 1 — 20 is improper, and Applicants respectfully requests withdraw of this rejection.

The claims do not stand or fall together. Instead, Applicants present separate arguments for various independent and dependent claims. Each of these arguments is separately argued below and presented with separate headings and sub-heading as required by 37 C.F.R. § 41.37(c)(1)(vii).

### **Claim Rejections: 35 USC § 102(b)**

Claims 1-3, 6-18, and 20 are rejected under 35 USC § 102(b) as being anticipated by “Hierarchical Pixel Bar Charts” (Keim-2002). These rejections are traversed.

#### Claim 1

Claim 1 recites deriving a multi-level dynamic hierarchical structure based on drilldown sequences input from a user. These drilldown sequences derive **two different elements**: (1) a multi-pixel bar chart that simultaneously displays numerical values of aggregated data for plural bars, and (2) a graphical illustration that displays a comparison of the numerical values of aggregated data.

The recitations of claim 1 are illustrated in exemplary embodiments. By way of example, Figs. 1-3 of Applicants’ specification show various drilldown sequences. Fig. 5 then shows another drilldown sequence from Fig. 3. Notice that Figs. 3 and 5 include “numerical values of aggregated data” (shown at the top of the bars as “Total \$ Amount” and “# Transactions (x 1000)”). Fig. 6 shows a graphical illustration as a comparison of the numerical values of aggregated data from Fig. 5. By way of example, Fig. 6 shows comparisons of regions (JP, US, UK, etc.) of standard deviations for sales.

Keim-2002 does not teach or suggest all the elements of claim 1. Section 3.3 of Keim-2002 teaches that hierarchical pixel bar charts allow a user to select a bar of a pixel bar chart to get the bar expanded. This concept is illustrated in Fig. 7 of Keim-2002. As shown, the third bar in Fig. 7(a) is expanded through drilldown to a 2<sup>nd</sup> level and a 3<sup>rd</sup> level. Keim-2002 teaches drilling down from a first pixel bar to establish other pixel bars.

In other words, Keim-2002 shows that a user can expand one pixel bar in a first chart to plural pixel bars in a second chart. Importantly, nowhere does Keim-2002 teach or even suggest drilling down to derive a pixel bar chart that “displays numerical values of aggregated data for plural bars.” The pixel bar charts in Keim-2002 never even display numerical values of aggregated data. Where are the displayed numerical values of aggregated data in Keim-2002? They do not exist.

Figs. 12-15 in Keim-2002 do show pixel bar charts with numbers at the top of the bars. These numbers are days of a month (Keim-2002 states “Dx = day”). These number are not “aggregated data” as recited in the independent claims.

Anticipation under section 102 can be found only if a single reference shows exactly what is claimed (see *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 227 U.S.P.Q. 773 (Fed. Cir. 1985)). For at least these reasons, claim 1 and its dependent claims are allowable over Keim.

As another example, claim 1 recites drilling down to derive “a graphical illustration that displays a comparison of the numerical values of aggregated data.” Keim-2002 does not teach this element. Again, Keim-2002 merely teaches that a user can expand one pixel bar in a first chart to plural pixel bars in a second chart. Keim-2002 never teaches or even suggests that drilling down from one pixel bar chart generates a graphical illustration that includes a comparison of aggregated data from the one pixel bar chart.

For a prior art reference to anticipate under section 102, every element of the claimed invention must be identically shown in a single reference (see *In re Bond*, 910 F.2d 831, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990)). For at least these reasons, claim 1 and its dependent claims are allowable over Keim.

#### Claim 10

Claim 10 is allowable for at least the reasons given in connection with claim 1. In addition, claim 10 recites drilling down from a pixel bar chart to derive two different elements: (1) another pixel bar chart that displays numerical values of aggregated data and (2) a graph that displays a comparison of these numerical values of aggregated data. Keim-2002 does not show a drilldown sequence that computes both elements.

Keim-2002 shows drilldown sequences that compute a pixel bar chart, not a graph and another pixel bar chart. For example, Fig. 7b in Keim-2002 shows pixel bars computed from a drilldown sequence of a bar in Fig. 7a. Notice that nowhere do any of the bars show “numerical values of aggregated data.” Further, notice that nowhere does Keim-2002 disclose that his drilldown sequences from a bar in Fig. 7a compute a graph that displays comparisons of numerical values of aggregated data that are in the pixel bar chart.

In short, Keim-2002 does not teach drilling down from a pixel bar chart to derive **both** (1) another pixel bar chart that displays numerical values of aggregated data and (2) a graph that displays a comparison of these numerical values of aggregated data.

#### Claim 11

Claim 11 recites constructing a multi-level hierarchical **tree** having a plurality of different levels to graphically illustrate at least a portion of the data. Figure 1 in Applicants’ application shows an example of a multi-level hierarchical tree.

Nowhere does Keim-2002 disclose a hierarchical tree. The Examiner cites Figs. 7-8 and Section 3.3 in Keim-2-2002. Figs. 7 and 9 show hierarchical pixel charts, not trees. Section 3.3 discusses drill-down of hierarchical pixel bar charts, not trees.

#### Claim 16

Claim 16 is allowable for at least the reasons given in connection with claim 1. In addition, claim 16 recites that the drilldown sequences automatically computes two different elements: (1) a pixel bar chart showing numerical values of aggregated data and (2) a graph showing comparisons between these numerical values of aggregated data. Keim-2002 does not show drilldown sequences that compute both elements.

Keim-2002 shows drilldown sequences that computes a pixel bar chart, not a graph and another pixel bar chart. For example, Fig. 7b in Keim-2002 shows pixel bars computed from a drilldown sequence of a bar in Fig. 7a. Notice that nowhere do any of the bars show “numerical values of aggregated data.” Further, notice that nowhere does Keim-2002 disclose that his drilldown sequences compute a graph showing comparisons between numerical values of aggregated data that are in the pixel bar chart.



In short, Keim-2002 does not teach drilling down from a pixel bar chart to compute **both** (1) a pixel bar chart showing numerical values of aggregated data and (2) a graph showing comparisons between these numerical values of aggregated data.

**Claim Rejections: 35 USC § 103(a)**

Claims 2, 4-5 and 19 are rejected under 35 USC § 103(a) as being unpatentable over “Hierarchical Pixel Bar Charts” (Keim-2002) in view of USPN 5,893,090 (Friedman). These rejections are traversed.

As explained above, Keim-2002 does not teach or suggest all the elements of independent claims 1 and 10. Friedman fails to cure these deficiencies. Thus, dependent claims 1, 4-5, and 19 are allowable for at least the reasons provided in connection with respective independent claims 1 and 10.

### **CONCLUSION**

In view of the above, Applicants respectfully request the Board of Appeals to reverse the Examiner's rejection of all pending claims.

Any inquiry regarding this Amendment and Response should be directed to Philip S. Lyren at Telephone No. 832-236-5529. In addition, all correspondence should continue to be directed to the following address:

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Respectfully submitted,

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### **VIII. Claims Appendix**

1. A method for presenting data, comprising:
  - receiving the data; and
  - deriving a multi-level dynamic hierarchical structure for the data based on drilldown sequences input from a user, wherein the drilldown sequences automatically compute a graphical visual comparison of the data and comprise:
    - deriving a multi-pixel bar chart that simultaneously displays numerical values of aggregated data for plural bars; and
    - deriving a graphical illustration that displays a comparison of the numerical values of aggregated data.
2. The method of claim 1 wherein the comparison includes standard deviations for the numerical values of aggregated data.
3. The method of claim 1 wherein the plural bars of the multi-pixel bar chart have equal heights.
4. The method of claim 1 wherein deriving a graphical illustration further comprises providing a comparison of product sales with average product sales to derive a difference in product sales.
5. The method of claim 1 wherein deriving a graphical illustration further comprises deriving standard deviations between a plurality of products.
6. The method of claim 1 wherein deriving a multi-level dynamic hierarchical structure further comprises inputting preferences from the user for a plurality of different levels of the multi-level hierarchical structure.
7. The method of claim 1 wherein deriving a multi-pixel bar chart further comprises ordering a plurality of bars according to product ranking.

8. The method of claim 7 wherein ordering a plurality of bars further comprises arranging three consecutive bars to have a highest ranking and arranging three consecutive bars to have a lowest ranking.

9. The method of claim 1 wherein deriving a multi-pixel bar chart further comprises coloring pixels green and coloring pixels red, wherein the green pixels represent higher sales than the red pixels.

10. A computer-readable medium having computer-readable program code embodied therein for causing a computer system to perform a method of arranging data, said method comprising:

determining a set of attributes for placement of the data in a pixel bar chart having plural bars that each include a plurality of pixels with each pixel encoded with a portion of the data; and

drilling down from the pixel bar chart to derive (1) another pixel bar chart that displays numerical values of aggregated data for each of plural bars and (2) a graph that displays a comparison of the numerical values of aggregated data.

11. The computer-readable medium of claim 10 wherein said method further comprises constructing a multi-level hierarchical tree having a plurality of different levels to graphically illustrate at least a portion of the data.

12. The computer-readable medium of claim 10 wherein said graphically displayable array comprises an X-axis and a Y-axis.

13. The computer-readable medium of claim 12 wherein the X-axis represents a data category and the Y-axis represents a data value.

14. The computer-readable medium of claim 10 wherein each pixel is encoded with a color.

15. The computer-readable medium of claim 14 wherein the pixels are encoded with a plurality of different colors.

16. A computer system, comprising:

a bus;

a display device coupled to the bus;

a computer-readable memory coupled to the bus; and

a processor coupled to the bus, the processor executing code for:

receiving data;

deriving a multi-level dynamic hierarchical structure for the data based on preferences input from a user; and

navigating through the multi-level dynamic hierarchical structure using drilldown sequences input from the user, the drilldown sequences automatically computing (1) a pixel bar chart showing numerical values of aggregated data for each of plural bars and (2) a graph showing comparisons between the numerical values of aggregated data.

17. The computer system of claim 16 wherein the pixel bar chart is based on attributes from a previous hierarchical level.

18. The computer system of claim 16 wherein the graph provides a chart with multiple colors to visually signify changes in data distribution at a record level.

19. The computer system of claim 16 wherein the graph comprises a comparison of a dollar amount of product sales during a first period of time with a dollar amount of an average product sales during a second period of time.

20. The computer system of claim 16 wherein the graph comprises over one million data records.

**IX. EVIDENCE APPENDIX**

None.

**X. RELATED PROCEEDINGS APPENDIX**

None.